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Report of the second session

IPFC/IOFC JOINT WORKING PARTY OF EXPERTS ON INDIAN OCEAN AND WESTERN PACIFIC FISHERY STATISTICS

Bangkok, 13-17 December 1971

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, 1972

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PREPARATION OF THIS REPORT

At its first meeting in Rome, 16-20 September 1968, the Indian Ocean Fishery Commission (IOFC) decided to propose to the Indo-Pacific Fisheries Council (IPFC) the establishment of a joint working party to stimulate the development of fishery statistics within the Indo-Pacific regions. The Council at its 13th Session held in Brisbane 14-25 October 1968 agreed to the proposal.

The Working Party met for the second time in Bangkok in December 1971 and the present document is its report as approved by the members.

Statements in this report do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

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Legislation - protection against poor exploitation. Statistics. Classification systems. Population estimates - availability. Labor. Boats - commercial fishing. Gear for capture of organisms. Scientific personnel.
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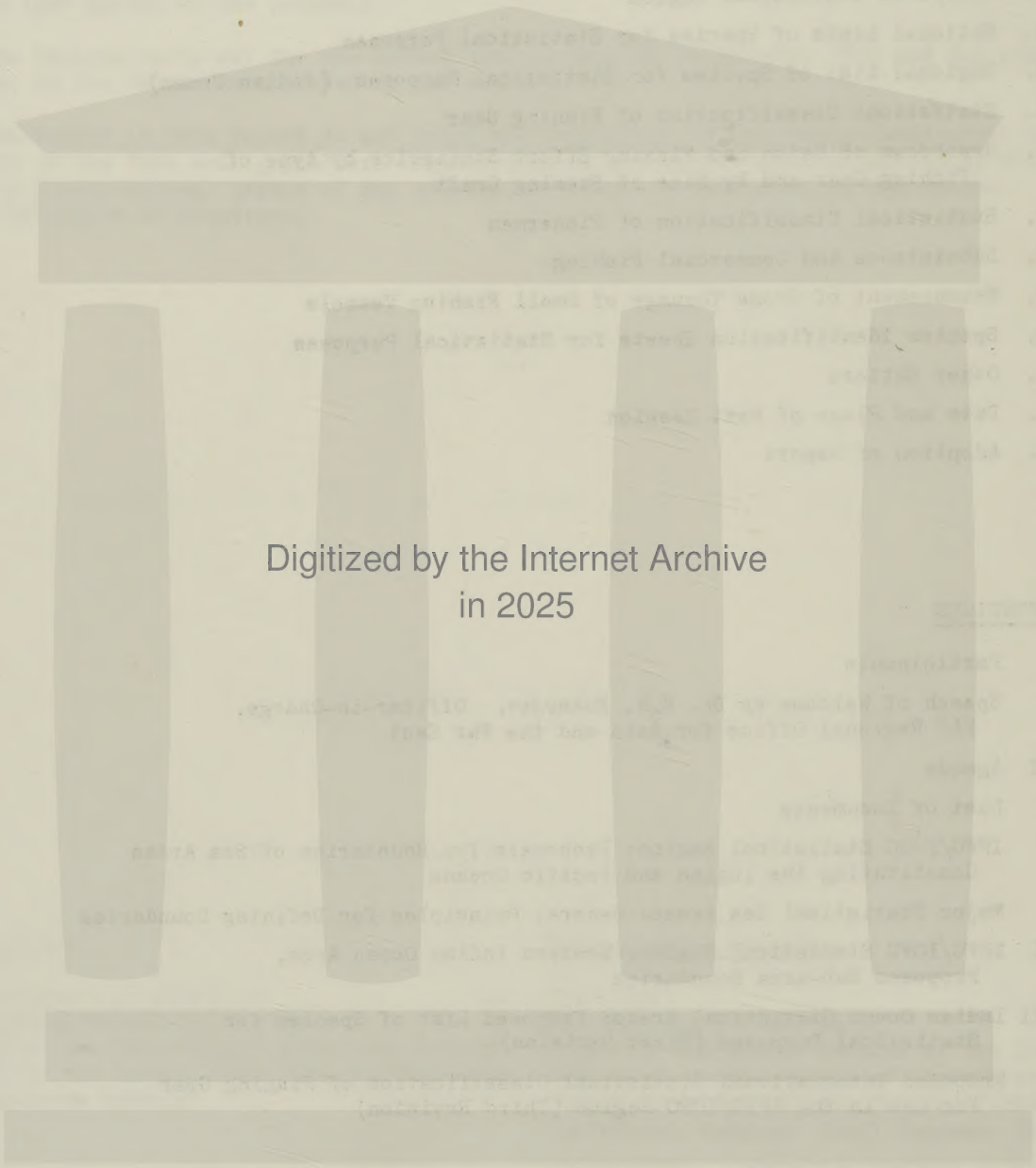

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1. INTRODUCTORY AND PROCEDURAL MATTERS

1.1 The second session of the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics took place from 13 to 17 December at the FAO Regional Office for Asia and the Far East, Bangkok, Thailand. A list of members of the Working Party and other participants is at Appendix I.

1.2 The participants were welcomed in an opening address by Dr. H.N. Mukerjee, Officer-in-Charge, FAO Regional Office for Asia and the Far East. See Appendix II.

1.3 The Working Party nominated Mr. M. Unar as Convener and Mr. P.N. Kamande as Vice-Convener.

1.4 The Working Party adopted the Agenda at Appendix III.

1.5 The following rapporteurs were appointed:

Agenda items 2, 5, 10	Mr. L. Butler
Agenda items 3, 4	Mr. S. Chullasorn and Dr. T. Yamamoto
Agenda item 6	Mr. A. Furukawa and Dr. T. Yamamoto
Agenda item 7	Mr. J. de la Cruz and Dr. T. Yamamoto
Agenda item 8	Mr. P.N. Kamande and Mr. L. Butler
Agenda item 9	Dr. T. Yamamoto

2. IPFC/IOFC STATISTICAL REGION

2.1 Introduction

The Working Party considered the paper "IPFC/IOFC Statistical Region" and dealt with the subject under the five following headings:

(i) The Region
(ii) The Areas - General Principles
(iii) The Areas - Proposed Boundaries
(iv) The Sub-areas - General Principles
(v) The Sub-areas - Proposed Boundaries

2.2 The Region

The Working Party agreed that the statistical interests of IPFC and IOFC could extend over the following sea areas, wholly or for an important part ; see Appendix V.

51 Western Indian Ocean
57 Eastern Indian Ocean
58 Antarctic Indian Ocean
71 Western Central Pacific
77 Eastern Central Pacific
81 Southwest Pacific
88 Antarctic Pacific

It was recognized that the Northern Pacific Ocean and the waters off the coasts of Ecuador, Peru and Chile were also the concern of other international agencies. For the present, therefore, it was agreed that attention should be drawn to Sea Areas 61 (Northwest Pacific), 67 (Northeast Pacific) and 87 (Southeast Pacific) only insofar as their boundaries coincided with those of any of the areas listed immediately above.

2.3 The Areas - General Principles

The First Session of the Working Party recommended seven factors and principles to be considered when the boundaries of large statistical sea areas were defined. 1/ This recommendation was submitted to the Second Session of IOFC (Rome, 26-29 October 1970) and the Fourteenth Session of IPFC (Bangkok, 18-27 November 1970) and also sent to member countries of the Commission and Council and to the South Pacific Commission (SPC). The only comment received was from SPC which agency proposed that a further principle be added to the seven already recommended, viz:

> The drawing of boundary lines through a group of islands having a common fishery and statistical system should be avoided.

The Working Party recommends that the existing list of factors and principles be extended to accommodate the proposal made by SPC. The revised list is at Appendix VI.

2.4 The Areas - Proposed Boundaries (see Appendix V)

2.4.1 The Western Indian Ocean Area

The boundaries of this area were recommended by the First Session of the Working Party, submitted to the Second Session of IOFC and Fourteenth Session of IPFC and also circulated to all member countries of IOFC and IPFC. Since the four boundaries had been approved either explicitly or implicitly by absence of comment by the international bodies and countries concerned, the Working Party merely noted the boundaries which for record purposes are listed below (see also Section 2.6 and Appendix VII).

(i) The Boundary with the Mediterranean Sea

The northern entrance of the Suez Canal.

(ii) The Western Boundary

A line along the meridian 30°E from the African coast to the parallel 50°S.

(iii) The Eastern Boundary

A line commencing on the east coast of India at the parallel 10°N running due east to the meridian 85°E, thence due south to the parallel 5°N, thence due west to the meridian 80°E, thence due south to the parallel 50°S.

(iv) The Southern Boundary

A line along the parallel 50°S from the meridian 30°E to the meridian 80°E.

1/ Report of the First Session of the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics, Bangkok, 1-5 December 1969; FAO Fisheries Reports No. 85; FIES/R85(E).

2.4.2 The Eastern Indian Ocean Area

(i) The Western Boundary

See section 2.4.1(iii) where the boundary line is already determined. See also (vi), Southern Boundary, immediately below.

(ii) The North Eastern Boundary from the Malay Peninsula to Sumatra

The Working Party considered three possibilities:

(a) a line running due south from the tip of the Malay Peninsula to the coast of Sumatra. This was found to cut an important Indonesian fishery.

(b) A line, in general terms, from the northern tip of Sumatra running eastward to terminate on the Malay Peninsula at the Thai/Malay frontier. This line was found to cut important Malay fishing grounds.

(c) A line, in general terms, running northward from Sumatra along the meridian 95°E to the parallel 10°N and thence eastward to the Malay Peninsula in the region of the Thai/Burma frontier. This line was also found to cut a fishery but was considered to be the least objectionable.

The Working Party recommended the line at (c) immediately above and requested the Indonesian and Thai members of the Working Party to provide the FAO Secretariat with charts showing the termination of the boundary line on their respective coasts, it being understood that it might not be possible to maintain the proposed boundary along the meridian 95°E or the parallel 10°N for the whole of its length.

(iii) The North Eastern Boundary from Sumatra to Java

The Working Party recommends that the boundary might be a line drawn from the lighthouse at Belimbing, Sumatra to the lighthouse at Tjihajar, Java and requested the Indonesian member of the Working Party to provide the FAO Secretariat with a chart showing the position, to the nearest minute, of each of the terminals of the proposed boundary.

(iv) The North Eastern Boundary from Java to Australia

The Working Party was faced with:

(a) not wishing to draw an east/west line through the islands to the east of Java which would have caused difficulty for the Indonesian fishery statistical services

(b) not wishing to draw a line, parallel to an east/west line through the islands, too far to the south and so enclose waters of the Indian Ocean in the Western Central Pacific

and recommends as follows:

A line commencing at a point on the Blambangan Pensinsula at the eastern end of Java (the Indonesian member of the Working Party to provide the FAO Secretariat with the position to the nearest minute) running due east to the meridian 115°E, thence due south to the parallel 11°30'S, thence due east to the meridian 125°E, thence due south to the coast of Australia. The parallel 11°30'S was selected because it utilizes the southern edge of the Timor Trough, a feature readily identified by fishermen, and kept the waters of the Indian Ocean included in the Western Central Pacific to a minimum.

(v) The South Eastern Boundary

The Working Party recommends a rhumb line commencing on the coast of Australia at the boundary between Victoria and New South Wales 1/, (lat 37°30'22"S long 149°58'30"E) running southeast to a point lat 37°31'50"S long 150°E and thence due south along the meridian 150°E to the parallel 50°S (but see (vi) Southern Boundary, immediately below).

(vi) The Southern Boundary

The Working Party noted that the present boundary which was the parallel 50°S lay at least partly, if not wholly, to the north of the Antarctic Convergence and that there was a tuna fishery between 50°S and 55°S at least south of Tasmania. The Working Party also noted that the line of the Antarctic Convergence lies near the parallel 50°S in the Western Indian Ocean and near the parallel 55°S in the east of the Eastern Indian Ocean but could not agree as to where the line began to move southward; opinions varied from about 80°E to about 115°E. The Working Party therefore recommends that the boundary might lie in its entirety along the parallel 55°S.

2.4.3 The Western Central Pacific Area

(i) The Western Boundary

See Section 2.4.2 (ii), (iii), (iv).

(ii) The Northern Boundary

The Working Party noted that according to current practice and recent correspondence, Japan and the U.S.S.R. were using, for the boundary of the Northwest Pacific Area, a line leaving the coast of China at the parallel 20°N, running due east along this parallel to the meridian 175°W and thence due north; the part of the boundary lying along 175°W was also of interest and acceptable to Canada and the U.S.A. (see section 2.4.5). It was also noted that this line cut the grounds of trawlers operating from Hong Kong and, further, that there was no possibility at present of breaking down the catch of a small vessel tuna longline fleet (vessels of less than 50 GT) and a shark longline fleet based on Taiwan which operated from around the shores of this island to as far south as the southern Philippines.

The Working Party subsequently recommends a line across Hainan Strait along the meridian 110°E and a line running due east from the coast of Hainan Island along the parallel 20°N as far as the meridian 175°W. It was proposed that for the time being the Hong Kong and Taiwanese authorities should attempt to split the catches of these three fleets between the Northwest Pacific and Western Central Pacific Areas by using ancillary information but where unable to do so should report the catch as taken in the Northwest Pacific Area, with a suitable footnote.

(iii) The Eastern Boundary

The Working Party recommends the meridian 175°W.

1/ The position is near but not identical with Cape Howe, the nearest clearly marked topographical feature on the charts of the area.

(iv) The Southern Boundary

The Working Party noted that the natural division between tropical and temperate waters lay along the parallel 25°S and recommends:

A line starting on the coast of Australia at Danger Point (lat 28°09'S long 153°34'S), running due east to the meridian 155°E, thence due north to the parallel 25°S, thence due east to the meridian 175°W.

It was also noted that this line did not cut through major island systems.

2.4.4 The Antarctic Indian Ocean Area

The Working Party recommended an area bounded by: the meridian 30°E to the west, the meridian 150°E to the east, and the boundaries of the Western and Eastern Indian Ocean Areas to the north.

2.4.5 The Eastern Central Pacific Area

(i) The Northern Boundary

The Working Party noted that the countries concerned with the boundaries of the Northeast Pacific Area were utilizing a western boundary of 175°W and as southern boundary a line commencing at lat 40°N long 175°W, running east along the parallel 40°N as far as the meridian 130°W, thence due north to the parallel 40°30'N, thence due east to the coast of North America. The Working Party recommends that this line be employed as the northern boundary of the Eastern Central Pacific Area.

(ii) The Western Boundary

The Working Party recommends a line running along the meridian 175°W from the parallel 40°N to the parallel 25°S.

(iii) The Southern Boundary

The Working Party saw no reason for proposing revisions to the current boundary of the Southeast Pacific Area which reflects the scope of the Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific. This boundary is a line commencing on the west coast of South America at the parallel 5°S running due west to the meridian 105°W, thence south to the parallel 60°S, thence east to the meridian 70°W, thence north to the coast of South America.

The Working Party recommends an eastward extension of the proposed southern boundary of the Western Central Pacific Area lying along the parallel 25°S to the meridian 105°W, thence north to the parallel 5°S, thence east to the coast of South America.

2.4.6 The Southwest Pacific Area

Taking the western, northern and eastern boundaries as determined by the boundaries of adjacent areas the Working Party recommends a southern boundary lying along the parallel 60°S which concords in general with the line of the Antarctic Convergence between the meridians 150°E and 105°W.

2.4.7 The Antarctic Pacific Area

(i) The Northern Boundary

This boundary is determined by the southern boundaries of the Southwest and Southeast Pacific Areas and would lie along the parallel 60°S.

(ii) The Western Boundary

This boundary is determined by the eastern boundary of the Antarctic Indian Ocean.

(iii) The Eastern Boundary

The Working Party proposes a southward extension of the western boundary of the CARPAS 1/ (Southwest Atlantic) Area, which is the eastern boundary of the Southeast Pacific Area and lies along the meridian 70°W.

2.5 The Sub-Areas - General Principles

2.5.1 The Working Party recognized that the further division of major sea areas into sub-areas was necessary to permit a deeper study of the development of fishery exploitation than that made possible by the division into major sea areas only. It was also noted that a sub-area was the largest unit area, data on which could be used for stock assessment work and resources management.

The Working Party further noted that since demersal stocks were often less mobile and occurred in more easily definable areas, first attention should be given to these stocks but the distribution of pelagic stocks should also be taken into account. Tuna resources however, were not to be taken into account when establishing a sub-area due to the ocean-wide migratory nature of this group of species. Moreover, the definition of areas for tuna statistics were the responsibility of committees and other bodies directly concerned with this fish and these bodies preferred the use of 5° squares. Lastly, it was also noted that the identification of stocks was not yet well developed in the IPFC/IOFC Region.

2.5.2 The Working Party subsequently proposed that the following principles and factors should be kept in mind when the boundaries of statistical sub-areas are being established:

(i) The natural divisions of the oceans and seas 2/
(ii) The structure of the resources and the environmental conditions within an area
(iii) Statistical sea boundaries already established for international purposes
(iv) Unless there are over-riding reasons boundary lines should be drawn along 5° lines of latitude and longitude. Where this was not suitable 1° lines of latitude and longitude should be followed as far as possible
(v) Where the boundary of a sub-area terminated at a coast, cognizance should be taken of the pertinent national fisheries and related statistical systems. Boundaries should also take cognizance of integrated island systems
(vi) Changes in sub-area boundaries should not be made frequently

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1/ Southwest Atlantic Fisheries Advisory Commission

2/ (a) Closed sea areas such as the South China Sea and the Red Sea might be considered as sub-areas since fish in such seas might not be expected to migrate to other sub-areas to a great extent.
(b) Other sea areas such as the Arabian Sea and the Bay of Bengal might be divided into at least two sub-areas, one based on the east side of the sea and the other on the west, most fishery resources being found fairly close to the coast for which separate stocks might exist even for the same species. If necessary a sub-area lying between coastal sub-areas on either side of a large sea might be established.

2.6 The Sub-Areas - Proposed Boundaries

Since only the boundaries of the Western Indian Ocean Area were firm the Working Party restricted its discussions on this subject to proposing sub-areas for this area only and recommends the sub-areas listed below; see Appendix VII.

1.0 Red Sea Sub-area

Northern limit: Northern entrance of Suez Canal.
Southern limit: A rhumb line from the frontier between Ethiopia and the French Territory of the Afars and Issas on the coast of Africa, across the mouth of the Red Sea, to the frontier between the Arab Republic of Yemen and the People's Democratic Republic of Yemen on the Arabian Peninsula.

2.0 Gulf Sub-area

The mouth of the Gulf might be closed by a line commencing at the northern tip of Ra's Musandam and running due east to the coast of Iran.

3.0 Western Arabian Sea Sub-area

The eastern and southern boundaries might be a line from the Iran/Pakistan frontier on the coast of Asia running south to the parallel 20°N, thence east to the meridian 65°E, thence south to the parallel 10°N, then west to coast of Africa; other boundaries are already determined. The Working Party also proposes that particular attention should be paid to ensuring that the Government of Somalia is made fully aware of the proposed southern boundary and its implications.

4.0 Eastern Arabian Sea, Laccadive and Ceylon Sub-area

The sea boundary might be a line commencing on the coast of Asia at the Iran/Pakistan frontier, running south to the parallel 20°N, thence east to the meridian 65°E, thence south to the parallel 10°S, thence east to the meridian 80°E which is the boundary between the Western and Eastern Indian Ocean Areas, thence north to the parallel 5°N, thence east to the meridian 85°E, thence north to parallel 10°N, thence west along this parallel to the east coast of India.

5.0 Somalia, Kenya and Tanzania Sub-area

A line commencing on the coast of Somalia at 10°N running east to the meridian 65°E, thence south to the parallel 10°S, thence west to the meridian 45°E, thence south along this meridian to a point due east of the mouth of Rovuma River on the coast of Africa (the frontier between Tanzania and Mozambique), thence due west to the coast of Africa at this point. The departure from the parallel 10°S in the last section of the proposed boundary was to accommodate the Tanzanian fishery close to the frontier with Mozambique. It was noted that it would be necessary to establish the point of termination of this last section more accurately in conjucntion with the pertinent authorities.

6.0 Madagascar and Mozambique Channel Sub-area

A line commencing on the coast of Africa at the mouth of the Rovuma River running due east to the meridian 45°E, thence north to the parallel 10°S, thence east to the meridian 55°E, thence south to the parallel 30°S, thence west to the meridian 40°E, thence north along this meridian to the coast of Mozambique.

7.0 Oceanic (Western Indian Ocean) Sub-area

The Western Indian Ocean Area excluding sub-areas 1 to 6 and 8.

8.0 Mozambique Sub-area[1/]

The sub-area covers the area of overlap between the International Commission for the South East Atlantic Fisheries(ICSEAF) Area otherwise known as the Southeast Atlantic Area and the Western Indian Ocean Area. This area is also treated as a sub-area by ICSEAF and is further sub-divided into two divisions. It might receive the same treatment within the Western Indian Ocean Area.

8.1 Marion-Edward Division

Waters lying between the parallels of 40°S and 50°S and the meridians of 30°E and 40°E.

8.2 Zambesi Division

Waters lying north of the parallel 40°S and between the meridians 30°E and 40°E.

1/ In documents concerned with ICSEAF this sub-area has been coded 51.9 as the number of sub-areas falling within Area 51 was unknown.

3. NATIONAL LISTS OF SPECIES FOR STATISTICAL PURPOSES

3.1 The Working Party reviewed the survey procedure designed for the purpose of establishing or improving national species lists by referring to Appendix I of the working paper "National Statistical List of Species" and the reports of surveys already undertaken in wholesale fish markets in Manila, Bangkok, Djakarta and Colombo.

3.2 The Working Party recognized that these surveys were extremely useful since they provided not only the trade names in use by fishermen and fish dealers which could be ultimately used as statistical items (or broken down into statistical items) in national statistical lists of species but also the taxonomic components of each trade name identified. The Working Party, therefore, recommends that the study be extended to other countries of the region and also to major local fish markets where a country is large and different trade names may be in use in different markets in the same country.

3.3 The Working Party recognized that the objective of the survey could be well achieved when the survey procedure was split into two steps as follows:

(1) The identification of trade names, which task should be undertaken by a fishery statistician;

(2) The identification of species constituting each trade name, which task should be entrusted to a fish taxonomist.

This two-step approach seemed to be quite essential, since if the entire work were entrusted to a fish taxonomist, the major effort might be directed toward the identification of species appearing in a fish market and the identification of trade names might be ignored. See also Section 4.4 below.

4. REGIONAL LIST OF SPECIES FOR STATISTICAL PURPOSES (INDIAN OCEAN)

4.1 The Working Party reviewed the current status of species breakdown in national catch statistics and considered the paper "Draft Regional Statistical List of Species" and in particular the appendix entitled "Proposed Regional Statistical List of Species for Western and Eastern Indian Ocean". It was noted that with the exception of countries in the Far East and Oceania catch statistics with adequate species breakdown were available in a very few countries due to the rudimentary nature of national fishery statistical systems in the region. However, even under such conditions the Working Party felt that it was worthwhile initiating work on the establishment of a regional list of species, since there was no reason why the main lines of a regional list should not be available before national fishery statistical systems were fully developed. When establishing national lists it would then be possible to ensure that international requirements were easily accommodated. It was also agreed that, in view of the large sea area under study, a regional statistical list of species should first be prepared for the Indian Ocean only.

4.2 As a first step the term "Statistical Item" was defined as follows:

A statistical item in a regional list of species is a species or a group of species for which separate statistics of catch are required for regional studies.

The items should be:

(i) commonly found over almost the entire area of the region or in a specific part of the region,

(ii) of commercial importance in terms of either quantity or value,

(iii) distinguishable from other items during the field operations of a catch survey.

4.3 The Working Party, aware of the absence of the Indian member of the Working Party and a participant from Australia, subsequently examined the Proposed Regional Statistical List of Species, and a revised list (First Revision) is at Appendix VIII. The classification has three stages:

(i) ISSCAAP[1/] Division (columns 1 and 2)
(ii) ISSCAAP Group (columns 3 and 4)
(iii) Statistical Item (columns 6 to 8)

It was noted that within any ISSCAAP Group there would be a residual statistical item which would be defined by the definition of the Group itself and the definitions of the identified items within it. There was therefore no need to list the residual items explicitly.

4.4 In column (5) of the newly proposed list each statistical item was classified as either A, B or C.

A. Statistical items so classified were considered as satisfying the conditions laid down in Section 4.2. It was noted that the acceptance of these statistical items would entail that countries report separate catch statistics for purposes of international comparison for any of the statistical items appearing in national catch.

B. These are items which appeared in the list presented to the Working Party and upon which the Working Party did not feel able to comment.

C. These are items appearing in the list presented to the Working Party which it was thought did not satisfy the conditions laid down in Section 4.2. Separate catch statistics for these items would not be necessary and the quantities taken should be included in the residual item of the apposite ISSCAAP Group.

4.5 The Working Party recognized that the revised list still contained areas of uncertainty, indicated by classification B, and required improvement and extension beyond fish and shellfish. In view of this, the Working Party recommends that:

(1) the revised list be circulated by the FAO Secretariat to Member Governments for comment, particularly with regard to its completeness and its compatibility with national catch surveys.

(2) at the same time steps be taken by the Secretariat to obtain the services of a biologist for at least one year to assist with the surveys described in Section 3.

4.6 The Working Party also reviewed to some extent the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) - FAO Fishery Circular No. 249 - from the viewpoint of its fitness for the IPFC/IOFC Region and recognized that, when total catch is compiled either at national level or at regional level in accordance with ISSCAAP Divisions or Groups within Division, such totals should be useful for studies in either fishery economics or fishery biology or both. In this regard, the Working Party felt that, as far as ISSCAAP Divisions were concerned, the totals were of value. However, it was noted that, when total catch was compiled in accordance with ISSCAAP Groups, the meaning of the resulting aggregates was not always clear. The Working Party, therefore, requested that the FAO Secretariat prepare a paper listing the principles followed for the establishment of ISSCAAP Groups for presentation to its third session. Owing to the limited time available the Working Party was not able to evaluate ISSCAAP in depth, or make concrete suggestions for its improvement as far as the IPFC/IOFC Region was concerned but reference was made in general terms to difficulties encountered when compiling national catch statistics according to ISSCAAP. Members of the Working Party undertook to send full details of any difficulties to the FAO Secretariat.

1/ International Standard Statistical Classification of Aquatic Animals and Plants: FAO Fisheries Circular No. 249. An extract is included in Appendix VIII.

4.7 The Working Party noted that there are some countries (Thailand, Malaysia, Singapore) where the quantity of trash fish, which is mainly caught by trawlers, is becoming significant, ranging from 30 percent to 50 percent of the total marine catch. In these countries trash fish, which is normally unsorted for species content, has been firmly established as a separate statistical item in the national classifications of species. In this regard the question was raised as to whether the quantity of such trash fish could be recorded separately under the current ISSCAAP; for instance, Group 3.9, Miscellaneous marine fishes, might be subdivided into two items:

(i) Trash fish, i.e. not for human consumption
(ii) Other, i.e. for human consumption.

5. STATISTICAL CLASSIFICATION OF FISHING GEAR

5.1 The Working Party was asked to consider "Proposed Regional Statistical Classification of Fishing Gear for use in the IPFC/IOFC Region - Second Revision" which attempted to reconcile:

(i) the regional classification proposed by the First Session of the Working Party which is available at Appendix VI of the Report of the First Session;

(ii) a world classification proposed by a meeting of experts held in Rome during 21 to 23 April 1971; an interim report was issued by this meeting of experts as FAO Fisheries Circular No. 280;

(iii) the results of a postal survey addressed to member countries of IOFC requesting national gear classifications.

5.2 The Working Party first considered the purposes for which the classification was being developed and decided it should provide a common basic classification to be used for all purposes including use by biologists engaged in stock assessment work, economists and administrators.

5.3 The Working Party then considered the list in detail and recommends a version (Third Revision) which is applicable to both marine and inland fishing and is at Appendix IX of this report.

5.4 The Working Party also considered a paper proposing definitions for the classes appearing in the classification proposed by the First Session of the Working Party (First Revision) and certain improvements were recorded. However, since the First Revision had subsequently been replaced by the Third Revision it was decided that the set of definitions considered be revised to take into account the changes in the classification list before being presented for wider consideration.

6. BREAKDOWN OF CATCH AND FISHING EFFORT STATISTICS BY TYPE OF FISHING GEAR AND BY SIZE OF FISHING CRAFT

6.1 The Working Party considered the working paper "Breakdown of Catch and Fishing Effort Statistics by Type of Fishing Gear and Size of Fishing Craft", describing the current status of catch and fishing effort statistics in the North Atlantic Ocean, and the nature of the fisheries in the IPFC/IOFC region, which can be summarized as follows:

(i) There are only a very few international fisheries in which a common stock is fished by fishing fleets from different countries. Moreover, unlike the North Atlantic Area fisheries, the area of these international fisheries is limited and not spread throughout the IPFC/IOFC Region.

(ii) For the rest of fisheries, which account for the bulk of the fish caught in the IPFC/IOFC Region, the area of capture is mostly confined to inshore waters and the types of fishing gear in use are mostly traditional and vary from country to country.

6.2 The Working Party recognizing the difficulties, referred to in the working document, to be overcome before catch and effort statistics can be reported by countries to an international agency for publication in an annual regional bulletin of fishery statistics and not being fully aware of all users' requirements recommends that:

"The FAO Secretariat prepare a full set of statistical tables which might be needed by users of fishery statistics, and thus constitute a regional annual statistical bulletin for consideration at Third Session of the Working Party".

It was further noted that in practice it would be necessary to attempt, as a first step, a limited annual bulletin (e.g. showing catch by area by species and perhaps catch and effort of the international fisheries) and if the attempt were unsuccessful move forward to an annual bulletin encompassing greater detail and coverage. It was therefore proposed that each table in the draft annual bulletin should be coded to indicate at which step, in the development of the bulletin, data for the particular table should be reported and published.

7. STATISTICAL CLASSIFICATION OF FISHERMEN

7.1 The Working Party recalled that the First Session had already recommended that the currently utilized International Classification of Fishermen should be modified by the excise of all reference to income when applied to the IPFC/IOFC Statistical Region. This revised classification would read as follows:

(i) Full-time: fishermen spending at least 90 percent of their working time in fishing

(ii) Part-time: fishermen spending at least 30 percent but less than 90 percent of their working time in fishing

(iii) Occasional: fishermen spending less than 30 percent of their working time in fishing.

7.2 The Working Party confirmed that classes of fishermen should be defined in terms of time spent fishing only. It further recommends that for survey field operations an even simpler set of definitions might be used, viz.:

(i) Fully engaged in fishing: Fishermen who spent all of their working time[1/] fishing

(ii) Mainly engaged in fishing: Fishermen who spent a major part of their working time fishing

(iii) Partly engaged in fishing: Fishermen who spent a minor part of their working time fishing

The Working Party also proposed that the fishermen falling within each class might be described as:

(i) Full-time
(ii) Part-time (major)
(iii) Part-time (minor)

1/ A survey would refer to activity during a period of one year, preceding the survey date

7.3 The Working Party recognized that the total number of fishermen for each class would have but a limited meaning and that the following breakdown would also be useful:

1. Marine

   1.1 Capture
   1.2 Culture

2. Inland

   2.1 Capture
   2.2 Culture

It was proposed that the Working Party should consider definitions for these four categories at its next session.

7.4 The Working Party also considered the difficulties connected with the production of annual statistics on fishermen and asked that the Secretariat prepare a paper on current national practices for consideration at the Third Session.

8. SUBSISTENCE AND COMMERCIAL FISHING

8.1 The Working Party discussed the proposal in the document "Subsistence and Commercial Fishing" that the term subsistence fishing be given the very precise meaning of fishing for consumption within the fisherman's household and commercial fishing be defined as fishing for the market.

8.2 It was noted that in practice the term subsistence fishing (or terms such as sustenance fishing) is used to describe the activity of small-scale fishermen fishing primarily for the market and having a low standard of living.

8.3 In view of this conflict it was proposed that the use of the term subsistence fishing be discouraged and the situation in paragraph 8.2 be described as small-scale or household fishing.

9. MEASUREMENT OF GROSS TONNAGE OF SMALL FISHING VESSELS

9.1 The Working Party considered the paper "Measurement of Gross Tonnage of Small Fishing Vessels" and noted that there are great differences among countries in the Region with regard to:

(1) the definition of enclosed spaces,
(2) formulae used for the measurement of GT,
(3) the definitions of L (Length), B (Breadth) and D (Depth).

Taking into account the usefulness of GT for the study of profitability of fishing according to different sizes of fishing craft as well as for the study of fishing power for use in stock assssment work, the Working Party recommends that Governments of the Region considering changing their present method of calculating GT for small vessels might follow the suggestions in the working paper, where applicable.

9.2 In the light of the fact that in many countries the method of measuring GT is under the jurisdiction of Government organizations other than the Department of Fisheries, the Working Party requests that the FAO Secretariat might consider taking action to facilitate international standardization of GT measurement for small vessels.

10. SPECIES IDENTIFICATION SHEETS FOR STATISTICAL PURPOSES

10.1 The Working Party discussed "Species Identification Sheets for Statistical Purposes (SIS) for the IPFC/IOFC Region" which was accompanied by an example of an Identification Sheet prepared for the Mediterranean and Black Sea Statistical Area and, agreeing that the project merited the full support of the Working Party, recommends that:

> Participants should prepare and send to the FAO Secretariat a list of tropical species (marine fishes only) for which it was thought Species Identification Sheets were the most urgently needed.

10.2 The Working Party also considered a proposal that each participant should, using the model from the Mediterranean and Black Sea Area, prepare a draft Identification Sheet for each of the species of interest to him for forwarding to FAO. It was, however, thought that this might lead to unnecessary duplication of work and it is therefore recommended that:

> Each participant forward the FAO Secretariat a list of those species for which he was prepared to submit draft Species Identification Sheets. The lists would be collated by the Secretariat which would, in turn, inform each participant of those species for which the Secretariat would be pleased to receive draft Species Identification Sheets.

10.3 It was also noted that it was envisaged that an FAO/DANIDA "Seminar on Fish Taxonomy in South East Asia" would be held at the Phuket Marine Laboratory, Thailand, in December 1972 to provide, inter alia, a better basis for the identification of selected commercially important fishes occurring in the area; the material becoming available in response to the two recommendations in this section would be made available to this Seminar so as to be able to offer the maximum support.

10.4 The Working Party stressed that all work undertaken within the ambit of the SIS Programme should take into account the Statistical Lists of Species being developed by the Working Party; see Sections 3 and 4 and Appendix VIII.

11. OTHER MATTERS

11.1 Noting the growing importance of sport fishing in the fishery activity of certain countries the Working Party recommends that:

> Both the FAO Secretariat and the Working Party give attention to the statistical treatment of sport fishing.

11.2 The Working Party considered its future programme and decided that it would probably suffice to continue work on the subjects already in hand. If however it appeared that it was possible to commence work on fresh topics the subject matter would be decided by correspondence between the Secretariat and the Convener.

12. DATE AND PLACE OF NEXT SESSION

12.1 The Working Party recommends that a Third Session of the Working Party should take place in the second half of 1973 and provision might be made for a period of up to eight working days.

12.2 As to the venue, the Working Party proposed that it might be of value to hold future sessions of the Working Party elsewhere than at the FAO Regional Office for Asia and the Far East and that a few days might be set aside for visiting some fishing installations in the host country and studying the local fishery statistical system. It was thought that an approach might be made to Japan and Indonesia in that order.

13. ADOPTION OF REPORT

13.1 The Report of the Second Session of the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics was adopted.

Appendix I

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Appendix II

SPEECH OF WELCOME

by

H.N. Mukerjee
Officer-in-Charge
FAO Regional Office for Asia and the Far East

Gentlemen,

On behalf of Dr. D.L. Umali, Assistant Director-General/Regional Representative for Asia and the Far East, who is out on duty travel at present, it is my privilege and pleasure to welcome the distinguished participants to this second meeting of the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics. We, in this Regional Office, will try to provide you with all possible facilities so that your deliberations may be brought to the most successful conclusion.

2. As you are aware, the first meeting of the present Working Party was held in Bangkok in December 1969 and was successful in producing a number of useful recommendations with regard to fishery statistical standards. Of these recommendations one of the most important was "Minimum Requirement of a National Fishery Statistical System". This recommendation suggested that a National Fishery Statistical System should cover:

(i) Fishing Establishments and Fishing Labourers Households

(ii) Fishing Manpower

(iii) Fishing Craft

(iv) Fishing Units

(v) Quantity of Fish Caught and the related Fishing Effort

and (vi) Value of Catch

3. As you are further aware, a fishing industry is composed of different kinds of fishing establishments, both large and small, employing fishing craft which vary in size as well. There are numerous species being caught by a large number of different fishing gears. Further, fishing operations take place, not only close to the shores of home countries but also on the high seas, and hence the same fishery resource is sometimes exploited by fishing fleets of different countries. In order to satisfy the various needs of fishery administrators, economists and biologists, all of these varying situations have to be clearly described in quantitative terms, and for these purposes a number of standard statistical classifications have to be established particularly for the purpose of ensuring international comparability of fishery statistical data.

4. Consequently, the first meeting of the present Working Party also considered to some extent the question of such classifications and made certain recommendations with respect to classifications on fishing manpower, fishing craft, fishing gear, species and fishing areas. However, owing to the complex nature of the fisheries of the IPFC/IOFC Region and the limited information available for study, many of the classifications suggested by the first meeting were tentative. It is, therefore, anticipated that the deliberations of the present meeting will be particularly directed towards establishing more sound and meaningful classifications which will really fit the fisheries of the region.

5. Now I would like to draw your particular attention to the fact that in compliance with a resolution of the 11th Session of IPFC many countries in Asia and the Far East have undertaken or are going to undertake a fishery census in the near future with technical assistance provided by our Regional Fishery Statistician. You may recall that such fishery censuses were originally proposed not only with the aim of clarifying the econimc structure of fishing industries but also for the construction of suitable frames for designing fishery production surveys. Thus, it can be said that the time has come for many countries in the region to proceed to the next step which is to implement better fishery production surveys. Naturally, such surveys require the introduction of a number of standard statistical classifications which are now under study. In view of this you will realise the significance of the present meeting for the development of fishery statistics in the region.

6. Last of all, I would like to refer to the document entitled "National and Regional List of Species for Statistical Purposes", since this subject is probably the most important agenda item in the present meeting. As you are aware, catch data broken down by species are considered, among the various fishery statistics, to be an indispensable requisite for both economic analysis of a fishing industry and biological research on fishery resources. However, the current situation in the region for these most important data is difficult both in terms of accuracy and the extent of species breakdown. This is largely because of the lack of well-determined species lists for statistical purposes. Since we in the FAO Regional Office here are now planning to have a consultant in 1972 to tackle this problem, your constructive suggestions in this regard will be most appreciated.

Thank you.

Appendix III

AGENDA

		Document
1.	PROCEDURAL AND INTRODUCTORY MATTERS	
	1.1 Opening of meeting	
	1.2 Nomination of convenor	
	1.3 Adoption of agenda and timetable	
	1.4 Nomination of rapporteurs	
2.	IPFC/IOFC STATISTICAL REGION	IPFC/IOFC/ST/18.
3.	NATIONAL LISTS OF SPECIES FOR STATISTICAL PURPOSES	IPFC/IOFC/ST/21
4.	REGIONAL LIST OF SPECIES FOR STATISTICAL PURPOSES (INDIAN OCEAN)	IPFC/IOFC/ST/20
5.	STATISTICAL CLASSIFICATION OF FISHING GEAR	IPFC/IOFC/ST/22
6.	CLASSIFICATION OF FISHING CRAFT AND GEAR FOR THE PURPOSE OF REPORTING CATCH AND EFFORT STATISTICS	IPFC/IOFC/ST/25
7.	STATISTICAL CLASSIFICATION OF FISHERMEN	IPFC/IOFC/ST/23
8.	SUBSISTENCE AND COMMERCIAL FISHING	IPFC/IOFC/ST/24
9.	MEASUREMENT OF GROSS TONNAGE OF SMALL FISHING VESSELS	IPFC/IOFC/ST/26
10.	SPECIES IDENTIFICATION SHEETS FOR STATISTICAL PURPOSES	IPFC/IOFC/ST/27
11.	OTHER MATTERS	
12.	NEXT MEETING	
13.	ADOPTION OF REPORT	

Appendix IV

LIST OF DOCUMENTS

IPFC/IOFC/ST/12	Report of First Session (FIES/R85)
15	Annotated Provisional Agenda
16	Provisional Time Table
17	List of Documents
18	IPFC/IOFC Statistical Region
19	Fishery Statistics in the (i) Indian Ocean Fishery Commission (IOFC) Region (ii) Indo-Pacific Fisheries Council (IPFC) Region
20	Draft Regional Statistical Lists of Species
21	National Statistical Lists of Species
22	Regional Statistical Classification of Fishing Gear
23	International Statistical Classification of Fishermen for use in the IPFC/IOFC Region
24	Subsistence and Commercial Fishing
25	Breakdown of Catch and Fishing Effort Statistics by Type of Fishing Gear and by Size of Fishing Craft
26	Measurement of Gross Tonnage of Small Fishing Vessels
27	Species Identification Cards for Statistical Purposes
28	Report of the Seventh Session of the Coordinating Working Party on Atlantic Fishery Statistics

Major Statistical Sea Areas
General Principles for Defining Boundaries

The division of the oceans of the world into large areas is useful to permit the study of the general outline of the development of fishery exploitation both in the biological and related economic sense and when defining the boundaries of such areas the following factors and principles should be considered:

i) The natural divisions of the oceans and the seas.

ii) The structure of the resources and the environmental conditions within an area.

iii) The statistical sea area boundaries already established for international purposes.

iv) An ocean should be divided in temperate and tropical zone seas. Such zones should further be divided into eastern and western areas. Within the same ocean the structure of the resources and the environmental conditions differ greatly between tropical and temperate zones and between the sea areas off opposing continents. Most fishery resources are related to a given continent and different stocks are found off each continent even for the same species. Further, owing to the differences in the development of fisheries off each continent, the extent to which resources have been exploited will vary between the eastern and western areas of an ocean.

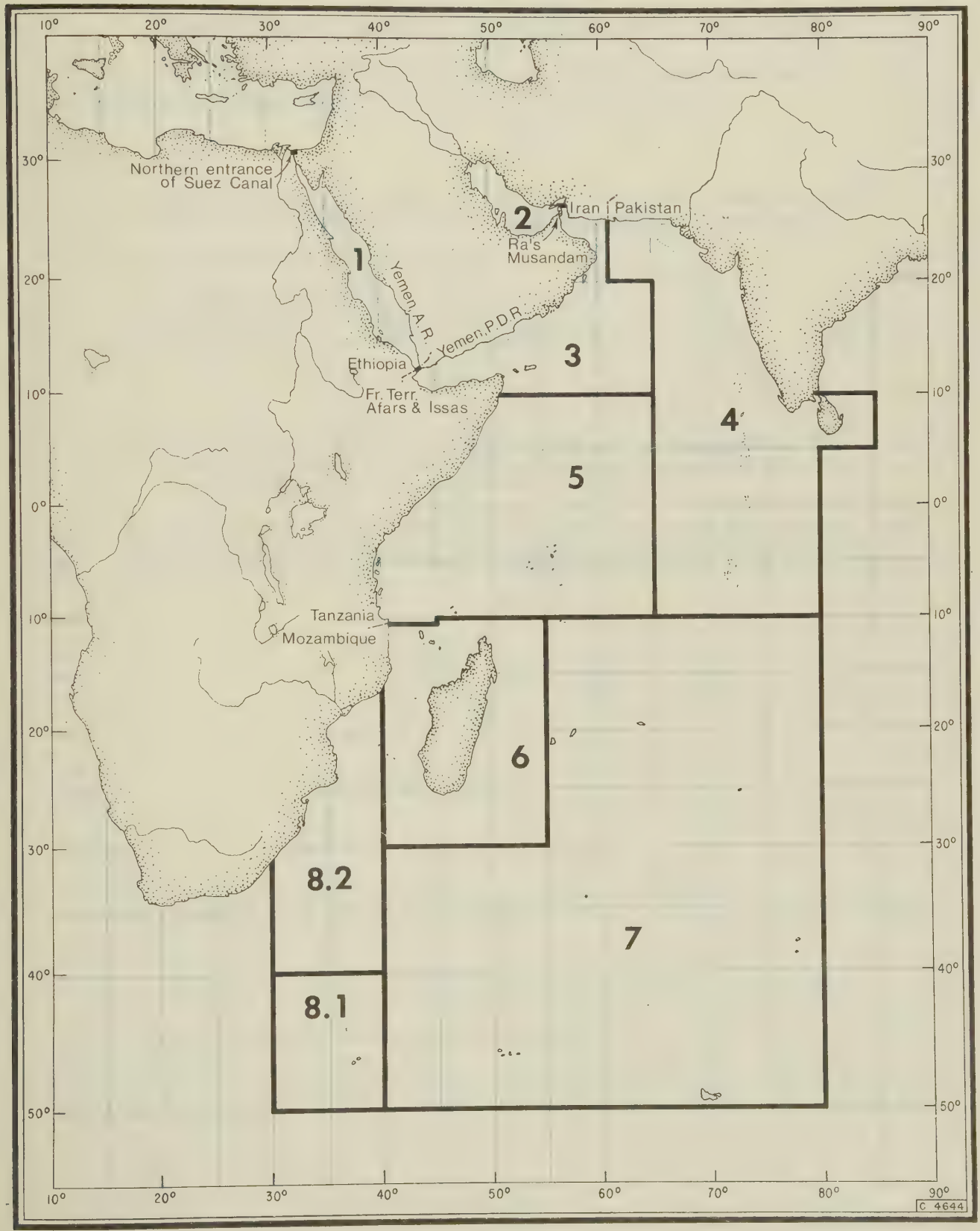
v) Where the boundary of a sea area terminates at a coast, cognizance should be taken of the pertinent national fisheries and statistical practices.

vi) The drawing of boundary lines through a group of islands having a common fishery and statistical system should be avoided.

vii) Unless there are over-riding reasons, boundary lines should be drawn along 5° lines of longitude and latitude.

viii) Changes in area boundaries should not be made frequently.

IPFC/IOFC STATISTICAL REGION: WESTERN INDIAN OCEAN AREA (51)
PROPOSED SUB-AREA BOUNDARIES



Appendix VIII

INDIAN OCEAN STATISTICAL AREAS
PROPOSED LIST OF SPECIES FOR STATISTICAL PURPOSES: FIRST REVISION

(with outline of International Standard Statistical Classification of Aquatic Animals and Plants: ISSCAAP)

NOTE:

1. The list of species and groups of species is intended to apply to both the Eastern Indian Ocean and the Western Indian Ocean Statistical Areas.

2. The classification has three stages:

   (i) ISSCAAP Division (columns 1 and 2)
   (ii) ISSCAAP Group (columns 3 and 4)
   (iii) Statistical Item (columns 6 to 8)

3. The coding in column (5) means:

   A. Proposed as a statistical item
   B. Not able to say whether should or should not be a statistical item
   C. Should not be a statistical item but part of the residual item for the ISSCAAP Group within which it falls.

4. As indicated in 2C, within each ISSCAAP Group there would be a residual item. Similarly within each Division there would be a residual Group. Residual items or Groups where not referred to specifically should be taken as understood.

INTERNATIONAL STANDARD STATISTICAL CLASSIFICATION OF AQUATIC ANIMALS AND PLANTS (ISSCAAP)[1/]

DIVISION 1 *FRESHWATER FISHES*

Group
- 11 Carps, barbels and other cyprinids
- 12 Tilapias and other cichlids
- 13 Miscellaneous freshwater fishes

DIVISION 2 *DIADROMOUS FISHES*

Group
- 21 Sturgeons, paddlefishes
- 22 River eels
- 23 Salmons, trouts, smelts, etc.
- 24 Shads, milkfishes, etc.
- 25 Miscellaneous diadromous fishes

DIVISION 3 *MARINE FISHES*

Group
- 31 Flounders, halibuts, soles, etc.
- 32 Cods, hakes, haddocks, etc.
- 33 Redfishes, basses, congers, etc.
- 34 Jacks, mullets, sauries, etc.
- 35 Herrings, sardines, anchovies, etc.
- 36 Tunas, bonitos, billfishes, etc.
- 37 Mackerels, snoeks, cutlassfishes, etc.
- 38 Sharks, rays, chimaeras, etc.
- 39 Miscellaneous marine fishes

DIVISION 4 *CRUSTACEANS*

Group
- 41 Freshwater crustaceans
- 42 Sea-spiders, crabs, etc.
- 43 Lobsters, spiny-rock lobsters, etc.
- 44 Squat-lobsters, nephrops, etc.
- 45 Shrimps, prawns, etc.
- 46 Krill, planktonic crustaceans, etc.
- 47 Miscellaneous marine crustaceans

DIVISION 5 *MOLLUSCS*

Group
- 51 Freshwater molluscs
- 52 Abalones, winkles, conchs, etc.
- 53 Oysters
- 54 Mussels
- 55 Scallops, pectens, etc.
- 56 Clams, cockles, arkshells, etc.
- 57 Squids, cuttlefishes, octopuses, etc.
- 58 Miscellaneous marine molluscs

1/ Extract from FAO Fisheries Circular No. 249 (FIES/C249), FAO, Rome, February 1970

DIVISION 6 WHALES, SEALS AND OTHER AQUATIC MAMMALS

Group 61 Blue whales, fin whales, sperm whales, etc.
62 Minke whales, pilot whales, etc.
63 Porpoises, dolphins, etc.
64 Eared seals, hair-seals, walruses, etc.
65 Miscellaneous aquatic mammals

DIVISION 7 MISCELLANEOUS AQUATIC ANIMALS

Group 71 Frogs and other amphibians
72 Turtles and other reptiles
73 Sea-squirts and other tunicates
74 Horseshoe crabs and other arachnoids
75 Sea-urchins, sea-cucumbers and other echinoderms
76 Miscellaneous aquatic invertebrates

DIVISION 8 MISCELLANEOUS AQUATIC ANIMAL PRODUCTS

Group 81 Pearls, mother-of-pearl, shells, etc.
82 Corals
83 Sponges
84 Aquatic bird guano, eggs, etc.

DIVISION 9 AQUATIC PLANTS

Group 91 Brown seaweeds
92 Red seaweeds
93 Green seaweeds and other algae
94 Miscellaneous aquatic plants

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2	Diadromous fishes	22	River eels	B	22.1	Long-finned eel	*Anguilla bengalensis*
				B	22.2	Australian eel	*Anguilla australis*
		24	Shads, milkfishes, etc.	A	24.1	Hilsa-like shads	*Ilisha elongata* *Ilisha filigera*
				A	24.2	Toothed shad	*Pellona ditchela*
				A	24.3	Indian shad	*Euplatygaster indica*
				A	24.4	Milkfish	*Chanos chanos*
				B	24.5	True hilsa	*Hilsa ilisha*
				B	24.6	Chinese herring	*Hilsa toli*
		25	Miscellaneous diadromous fishes	A	25.1	Barramundi	*Lates calcarifen*
3	Marine fishes	31	Flounders, halibuts, soles, etc.	A	31.1	Indian halibut	*Psettodes erumei*
				B	31.2	Malabar sole	*Cynoglossus semifasciatus*
		32	Cods, hakes, haddocks, etc.	B	32.1	Unicorn cod	*Bregmaceros maclellandi*
		33	Redfishes, basses, congers, etc.	A	33.1	Bombay duck	*Harpodon nehereus*
				A	33.2	Catfishes	*Osteogeniosus spp.* *Tachysurus spp.* *Plotosus spp.*
				A	33.3	Lizardfishes	*Saurida tumbil* *Saurida grandisquamis* *Saurida elongata* *Trachinocephalus myops*
				A	33.4	Morray eels	*Muraenesox spp.*
				A	33.5	Groupers n.e.i.	*Epinephelus spp.*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3 (Ctd)	Marine fishes (Ctd)	33 (Ctd)	Redfishes, basses, congers, etc. (Ctd)	A	33.6	Milk trevally	*Lactarius lactarius*
				A	33.7	Slipmouths	*Gazza spp.* *Leiognatus spp.*
				A	33.8	Grunts (=Grunters)	*Pomadysis spp.*
				A	33.9	Croakers	*Pseudosciaena deacanthus* *Otolithoides brunneus* *Johnius coibar*
				A	33.10	Goatfishes	*Upeneus spp.* *Pseudopenaeus spp.*
				A	33.11	Snappers	Lutjanidae
				A	33.12	Sea breams n.e.i.	Sparidae
				A	33.13	Percoids n.e.i.	Percoidei
				B	33.14	Ruff	*Arripis trutta*
				C	33.15	Congers n.e.i.	Congridae
				C	33.16	Squirrelfishes	*Holocentrus spp.*
		34	Jacks, sauries, etc.	A	34.1	Garfishes and Halfbeaks	*Tylosurus strongylurus* *Tylosurus crocodilus* *Xenentodon cancila* *Hyporhomphus gaimardi* *Zenarchopterus dispar*
				A	34.2	Flying-fishes	*Exocoetus volitans* *Cypsilurus spp.* *Parexocoetus brachypterus*
				A	34.3	Barracuda	*Sphyraena commersoni*
				A	34.4	Mullets	*Mugil spp.* *Liza spp.* *Valamugil buchanani*
				A	34.5	Threadfins	*Polynemus heptadactylus* *Eleutheronema tetradactylus* *Polydactylus indicus*
				A	34.6	Kingfish	*Rachycentron canadum*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3 (Ctd)	Marine fishes (Ctd)	34 (Ctd)	Jacks, sauries, etc. (Ctd)	A	34.7	Scads	*Decapterus spp.*
				A	34.8	Trevallies, Mackerel scads and Horse mackerels	*Caranx spp.* *Alectis spp.* *Carangoides spp.* *Megalaspis spp.* *Selar spp.* *Selaroides spp.*
				A	34.9	Pompanos and Queen fish	*Trachinotus spp.* *Chorinemus spp.*
				A	34.10	Silver pomfret and Chinese pomfret	*Pampus argenteus* *Pampus chinensis*
				A	34.11	Indo-Pacific pomfrets	Stromateidae
				C	34.12	Dolphinfish (=Dorado)	*Coryphaena hippurus*
		35	Herrings, sardines, anchovies, etc.	A	35.1	White sardine and Sardines n.e.i.	*Amblygaster(=Clupea)spp.* *Kowala coval* *Opisthopterus spp.* *Raconda spp.*
				A	35.2	Indian oil-sardine	*Sardinella longiceps*
				A	35.3	Anchovies n.e.i.	*Stolephorus spp.* *Anchoviella commersoni* *Anchoviella indica* *Anchoviella heterolabus* *Anchoviella baganeasis* *Coilia dussumieri* *Thrissocles malabarica* *Thrissocles mystax* *Thrissocles setirostris*
				B	35.4	Fringe-scale sardine	*Sardinella fimbriata*
				B	35.5	Sardinellas n.e.i.	*Sardinella spp.*
				C	35.6	Ladyfish (=Tenpounder)	*Elops saurus*
				C	35.7	Silverfish	*Megalops cyprinoides*
				C	35.8	Bonefish	*Albula vulpes*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3 (Ctd)	Marine fishes (Ctd)	36	Tunas, bonitos, billfishes, etc.	A	36.1	Oriental bonito	*Sarda orientalis*
				A	36.2	Dogtooth tuna	*Gymnosarda unicolor*
				A	36.3	Indo-Pacific sailfish	*Istiophorus gladius*
				A	36.4	Atlantic blue marlin and black marlin	*Makaira nigricans (=Ampla)* *Makaira indica*
				A	36.5	Pacific striped marlin and Shortbill spearfish	*Tetrapturus audax* *Tetrapturus angustirostris*
				A	36.6	Broadbill swordfish	*Xiphias gladius*
				A	36.7	Frigate mackerel, Atlantic little tuna, Eastern little tuna, Indian long-tailed tuna	*Auxis thazard/Auxis thynnoides* *Euthynnus alletteratus* *Euthynnus affinis* *Thunnus (=Kishinoella) tonggol*
				A	36.8	Oceanic skipjack	*Katsuwonus pelamis*
				A	36.9	Bluefin tuna, Southern	*Thunnus thynnus maccoyi*
				A	36.10	Yellowfin tuna	*Thunnus albacares*
				A	36.11	Albacore (=Longfin white tuna)	*Thunnus alalunga*
				A	36.12	Bigeye tuna	*Thunnus obesus*
		37	Mackerels, snoeks, cutlassfishes, etc.	A	37.1	Wahoo and Indo-Pacific Kingmackerels	*Acanthocybium solandri* *Gymnosarda unicolor*
				A	37.2	Indo-Pacific mackerels	*Rastrelliger kanagurta* *Rastrelliger neglectus*
				A	37.3	Hairtails	Trichiuridae
		38	Sharks, rays, chimaeras, etc.	A	38.1	Sharks	*Rhincodon spp.* *Stegostoma spp.* *Carcharinus spp.* *Scoliodon spp.* *Sphyrna spp.*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3 (Ctd)	Marine fishes (Ctd)	38 (Ctd)	Sharks, rays, chimaeras, etc. (Ctd)	A	38.2	Rays	*Rhinobatus spp.* *Rhynchobatus spp.* *Pristis spp.* *Pastinachus (=Dasyatis) spp.* *Amphotistius spp.* *Gymnura spp.* *Himantura spp.* *Rhenoptera spp.* *Mobula spp.*
4	Crustaceans	42	Sea spiders, crabs, etc.	A	42.1	Swimming crabs	*Portunus pelagicus* *Portunus sanguinolentus*
				A	42.2	Mangrove crab	*Scylla serrata*
		43	Lobsters, spiny rock lobsters, etc.	A	43.1	Spiny losters, Deep-sea lobster and Locust lobster	*Panulirus longiceps* *Panulirus ornatus* *Panulirus penicillatus* *Panulirus homarus* *Palinurus gilchristi* *Puerulus sewelli* *Thenus orientalis*
		44	Squat lobsters, nephrops, etc.	B	44.1	King prawn	*Nephrops andamanicus*
		45	Shrimps, prawns, etc.	A	45.1	Penaeid shrimps (a)	*Penaeus spp.* *Metapenaeus spp.*
				A	45.2	Penaeid shrimps (b)	*Parapenaeus spp.* *Trachypenaeus spp.* *Atyopenaeus spp.*
				A	45.3	Non-penaeid shrimps (a)	*Solenocera indicus* *Palaemon spp.* *Hippolysmata spp.* *Acetes spp.*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
4	Crustaceans (Ctd)	45 (Ctd)	Shrimps, prawns, etc. (Ctd)	A	45.4	Non-penaeid shrimps (b)	*Penoeapsis redacula* *Aristeus semidentatus* *Himmopenaeus triarthrus* *Hemipenaeus spp.* *Metapeneopsis spp.* *Parapandalus spinipes* *Plesionika martia* *Heterocarpus spp.* *Oplophorus gracilirostris* *Acanthophyra sanguinea*
5	Molluscs	52	Abalones, winkles, conchs, etc.	B	52.1	Rock whelks	*Thais spp.*
		53	Oysters	A	53.1	Cupped oysters	*Crassostrea cuculata* *Crassostrea discoides* *Crassostrea cristagalli* *Crassostrea madrasensis*
		54	Mussels	B	54.1	Green sea mussels	*Perna viridis*
		55	Scallops, pectens, etc.	A	55.1	All scallops, pectens, etc.	*Pecteus spp.*
		56	Clams, cockles, arkshells, etc.	A	56.1	Clams	*Meretrix meretrix* *Meretrix casta* *Katelysia spp.* *Donax cuneatus* *Solen kempi* *Sanguinolaria diphas* *Villorita cyprinoides*
				A	56.2	Cockles	
				A	56.3	Arkshells	
		57	Squids, cuttlefishes, octopuses, etc.	A	57.1	Cuttlefishes	*Sepia aculeata* *Sepia rostrata* *Sepiella inermis*

ISSCAAP				STATISTICAL ITEM			
DIVISION		GROUP					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5 (Ctd)	Molluscs (Ctd)	57 (Ctd)	Squids, cuttlefishes, octopuses, etc. (Ctd)	A	57.2	Squids	*Loligo spp.* *Sepiotheuthis arctipinnis*
				A	57.3	Octopuses	*Octopus spp.*
8	Miscellaneous Aquatic Animal Products	81	Pearls, Mother-of-pearl, Shells, etc.	A	81.1	Chank	*Xancus spp.*

PROPOSED INTERNATIONAL STATISTICAL CLASSIFICATIONS[1/] OF FISHING GEAR FOR USE IN THE IPFC/IOFC REGION (THIRD REVISION)

(AQUACULTURE EXCLUDED)

1. Trawls

    1.1 Otter trawls[2/]
        1.1.1 Side trawls
        1.1.2 Stern trawls
    1.2 Pair trawls (two boat trawls)[2/]
    1.3 Beam trals

2. Seine Nets

    2.1 Boat Seine
        2.1.1 Danish Seines[2/]
        2.1.2 Other boat seines
    2.2 Beach Seines

3. Surrounding Nets

    3.1 With purse line
        3.1.1 One boat purse seine[2/]
        3.1.2 Two boat purse seine[2/]
    3.2 Without purse line

4. Gill nets and Entangling Nets

    4.1 Drift gill nets
    4.2 Encircling gill nets
    4.3 Set gill nets

5. Lift Nets

    5.1 Boat lift nets
    5.2 Fixed lift nets
    5.3 Portable lift nets (smaller hand lift nets)
    5.4 Scoop nets

1/ 1 Major Group
1.1 Group
1.1.1 Sub-group

2/ For purposes of international comparison, always to be specified separately in national classifications

6. Hooks and Lines

- 6.1 Long Line
  - 6.1.1 Tuna long line[2/]
  - 6.1.2 Other drift long lines
  - 6.1.3 Set long lines (bottom long lines)
- 6.2 Pole and Hand Lines
  - 6.2.1 Tuna (including skipjack) pole and line[2/]
  - 6.2.2 Others, including vertical long lines
- 6.3 Troll lines

7. Traps

- 7.1 Guiding barriers
- 7.2 Stow nets
- 7.3 Portable traps
- 7.4 Others

8. Manual Gears for Collecting Shellfish and Seaweed

- 8.1 Shellfish collecting gears (dredges and diving excluded)
- 8.2 Seaweed collecting gears

9. Drive-in nets

10. Others

- 10.1 Push nets
- 10.2 Falling Gear
  - 10.2.1 Cast nets
  - 10.2.2 Cover pots
  - 10.2.3 Others
- 10.3 Gathering by hand (with or without attraction)
- 10.4 Diving without apparatus
- 10.5 Wounding gear
- 10.6 Dredges
- 10.7 Others

MR/C6621/4.72/E/1/700